

BLACK & DECKER



Catalog No. 6

Portable Electric Tools & Shop Equipment



PORTABLE
ELECTRIC TOOLS AND
SHOP EQUIPMENT



BLACK & DECKER
1923



VIEWS AT TOWSON HEIGHTS—THE BLACK & DECKER COMMUNITY

The Black & Decker organization is one big family, working together and living together in a community built by themselves. The happy workman is always the best workman. One of the most important of our assets is our organization. We have no hesitation in ascribing a large portion of the mechanical perfection of the Black & Decker products to the interest of the entire organization in their work

PORTABLE ELECTRIC TOOLS AND SHOP EQUIPMENT

*Including Electric Grinders
Valve Grinders, Screwdrivers
Electric Bench and Pedestal
Grinders and Electric
Air Compressors*



The BLACK & DECKER MFG. CO.

TOWSON HEIGHTS

BALTIMORE, MD., U.S.A.

BLACK AND DECKER PRODUCTS
*are obtainable at the same price
anywhere in the United States. They
are carried in stock by the leading
Mill and Mine Supply, Electrical, and
Automotive Jobbers.*

*Branch Offices, in charge of experi-
enced managers competent to make
recommendations, and Service Stations,
carrying complete stocks of parts, are
located in:*

BOSTON

DETROIT

NEW YORK

CHICAGO

PHILADELPHIA

KANSAS CITY

CLEVELAND

SAN FRANCISCO

CANADIAN FACTORY, 344 ST. JAMES ST.,
MONTREAL, P. Q.



FOREWORD

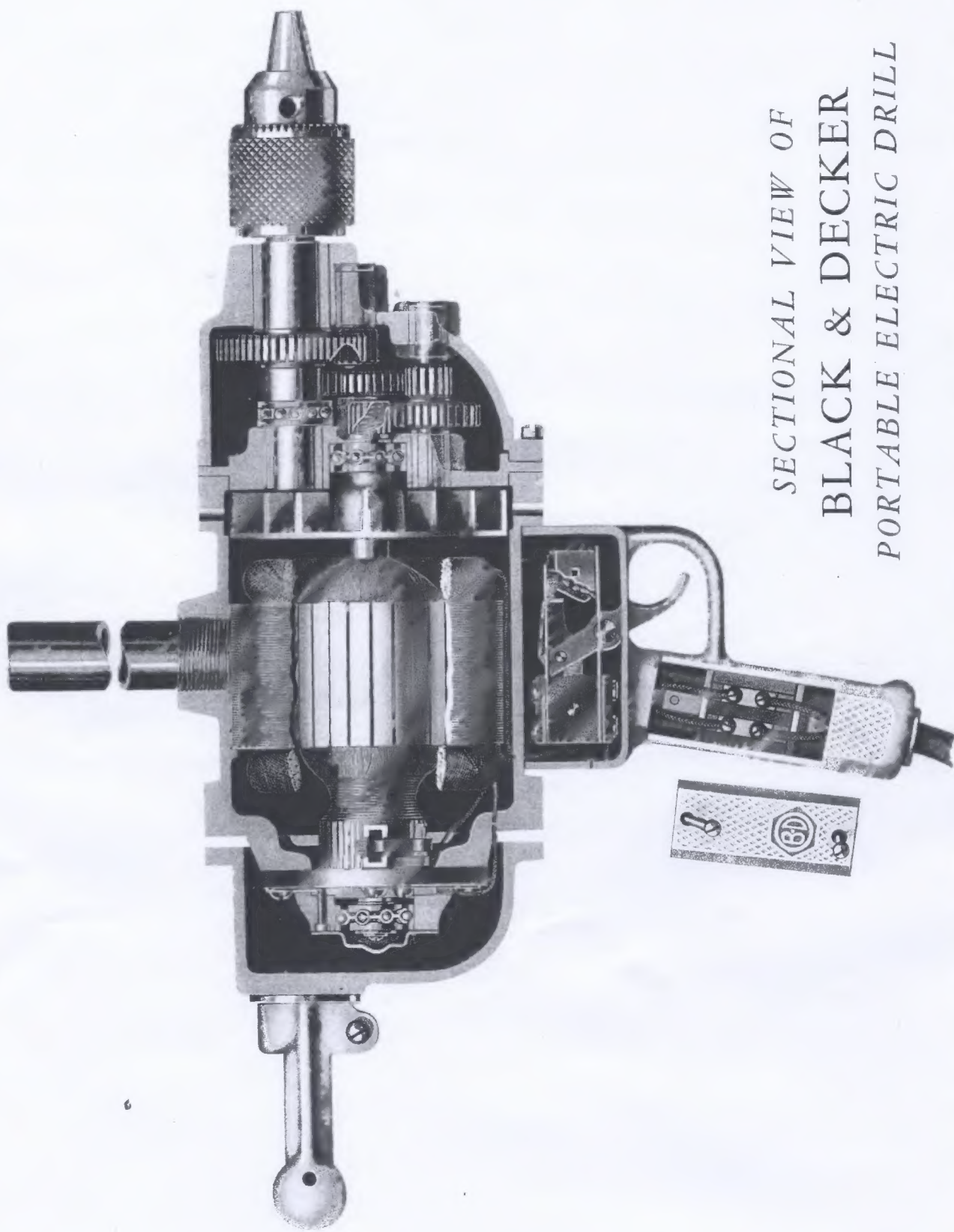


WHETHER you buy a house, an automobile or a piece of shop equipment, you must depend largely upon the reputation of the builder. The highest salaried buyers in the world agree that they would rather buy goods built by a house with a good reputation, without inspection, than to trust to their own judgment of goods built by a house without an established reputation.

In hiring a man or a tool to work for you, you depend more upon the reputation made in other places than upon your own ability to read character at first sight. Reputation is based upon performance. This means the establishment of the quality of products plus a policy of fair dealing demonstrated over a long period of time.

Black & Decker quality products and business policies are so well established that we can afford to suggest, if you are not already familiar with the *Black & Decker* reputation, that you get an opinion from anyone who has ever had experience with our products, or business dealings with our company.

In designing and building *Black & Decker* products price limitation is not considered. We strive to build the best that can be produced but by standardizing our manufacturing processes and manufacturing on a quantity basis we are able to keep the price down.



SECTIONAL VIEW OF
BLACK & DECKER
PORTABLE ELECTRIC DRILL

PORTABLE ELECTRIC DRILLS

ADVANTAGES OF DESIGN AND CONSTRUCTION



THE "*Pistol Grip and Trigger Switch*," which is patented, enables the operator to control the tool like an automatic pistol. This increases his efficiency and at the same time makes his work easier, as he can "forget" the control, which is practically automatic, and devote his entire attention to guiding the tool. This reduces drill bit breakages, as, if the drill bit catches on a burr, or when it breaks through the work, the operator naturally tightens his grip, instinctively pulling the trigger and stopping the drill.

There is no danger of the drill sagging on the bit when the switch is being operated, as the mechanic does not have to change the position of his hands in the slightest. This also lessens the risk of inaccurate centering in starting.

In addition to its superior convenience, the *trigger switch* has many mechanical advantages. There are only three moving parts: the trigger, the pawl which engages the ratchet, and the revolving contact block. The contact blades themselves are the springs which snap the circuit open with minimum arcing. There is nothing which is apt to get out of order and render the drill useless at a time when it may be urgently needed. There is a psychological appeal in the "*Pistol Grip and Trigger Switch*" which makes these drills a pleasure to use.

THE MOTOR

Unusually powerful. Tests have shown it to be impossible to stall even the smallest of these drills under the weight of the heaviest man. These tests are made using the maximum size bits drilling in steel. The motors are designed and built specially for *Black & Decker* drills. Armature and field are built up of insulated sheet steel laminations of high permeability, series wound, and any of these drills will operate on direct current or on 25, 40 or 60-cycle alternating current, on any two wires of a three-phase circuit. They operate satisfactorily on voltages 10% over or under those for which they are designed.

MOTOR COOLING—By means of a centrifugal fan mounted on the armature shaft a circula-



BLACK & DECKER



tion of air is maintained through the motor, cooling the commutator and windings. Through the air spaces formed by the corners of the hexagonal-shaped motor housing the cooling air is circulated around the outside of the field coil, as well as inside. In testing we have run these drills as long as fourteen weeks continuously, day and night, Sundays and holidays included, stopping only to renew brushes.

THE GEARS

Cut from special steel, heat treated, mounted on shafts ground to size, running in generous bronze bearings. The gear train is packed in grease in a grease-tight compartment like an automobile transmission; consequently gears give maximum service with minimum attention.

THE BEARINGS

All bearings are extra large.

THE DRILL SPINDLE

Offset for close corner drilling. It runs in a long bronze bearing and against a ball thrust bearing.

QUICK AND EASY CORD RENEWAL

One of the most recent improvements which have been added is the arrangement for quick and easy cord renewal. This is made possible by installing a fiber terminal block in the hollow handle of the "Pistol Grip." The field leads are attached to this terminal block and the flexible cable which carries the power from the lamp socket is merely attached to screw terminals on this fiber block. It is merely necessary to remove two screws and lift off the cover plate in order to expose this terminal block.



THE CABLE CLAMP

The flexible cable is held in a vise-like grip by the cable clamp, which is integral with the "Pistol Grip." This eliminates strains on the fine copper conductors which transmit the current.

EXTREME RIGIDITY

The *Black & Decker* Portable Electric Drills are extremely rigid and can be subjected to great pressure in drilling by reason of the hexagonal-shaped field case, a feature which is not found in any other portable electric drill.

LIGHT WEIGHT

We do not know of any other drills which, size for size, are as light in weight per horsepower.

CAREFULLY BALANCED

Particular attention has been paid to balancing these drills so as to make it possible to handle and control them with the least amount of physical effort.

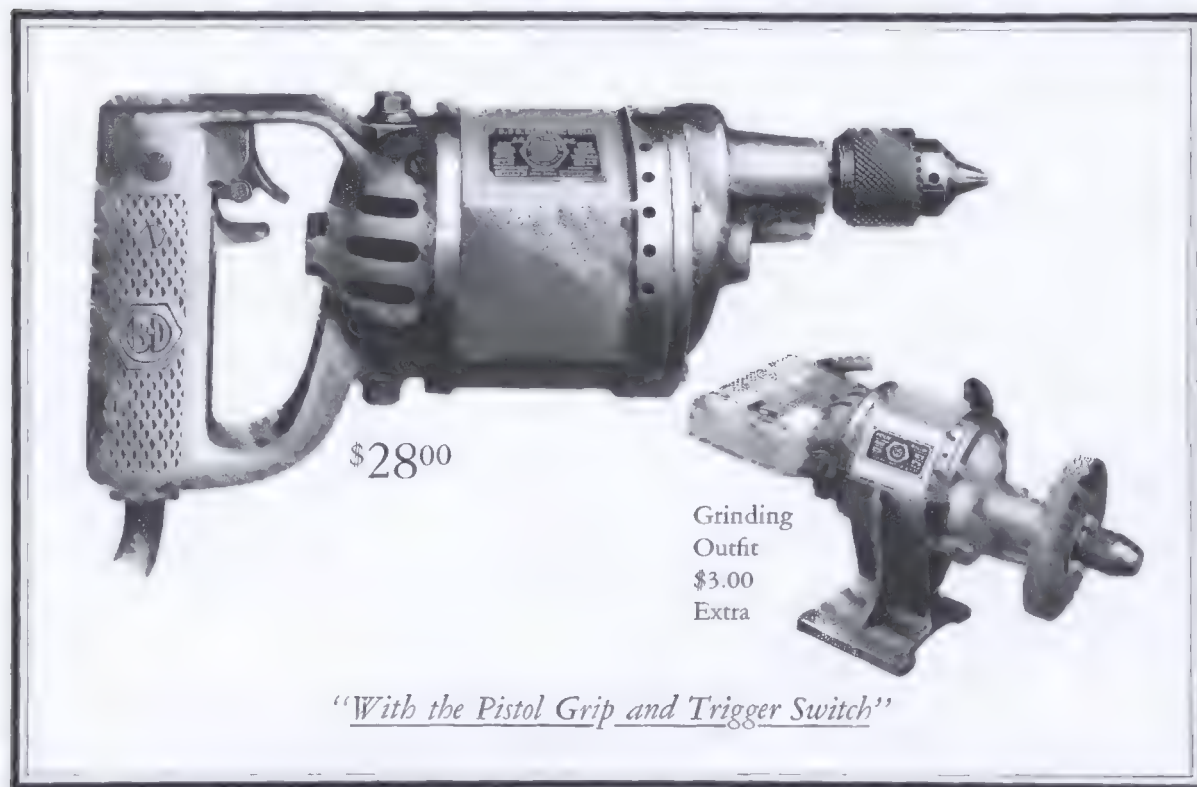
ACCESSIBILITY

The commutator end cover is separate from the armature bearing support, and may be easily removed for inspection or adjustment of brushes without interfering with the operation of the motor. The fact that the end cover is entirely separate from the armature shaft bearing eliminates the possibility of shaft binding in bearing if cover is distorted by dropping drill or by exerting excessive pressure with feed screw.

INTERCHANGEABILITY

Black & Decker Electric Drills are manufactured with production tooling and all parts are interchangeable.

DO YOU KNOW—that the portable electric drill is a production tool as well as a general utility tool?



"With the Pistol Grip and Trigger Switch"

1/4 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with three-jaw geared-nut chuck for straight-shank drill bits up to 1/4 inch, 7 1/2 feet of special light-weight duplex electric cable fitted with attachment plug.

A special all-purpose portable electric drill embodying all of the time-tested and proven features of the larger Black & Decker portable drills, including the "Pistol Grip and Trigger Switch", aluminum case and switch handle, special alloy steel gears heat-treated, grease lubrication, extra large bearings, air cooling, universal motor, etc.

Capacity in steel 0 to 1/4"
Capacity in hardwood 0 to 3/8"
No-load speed 2000 R.P.M.

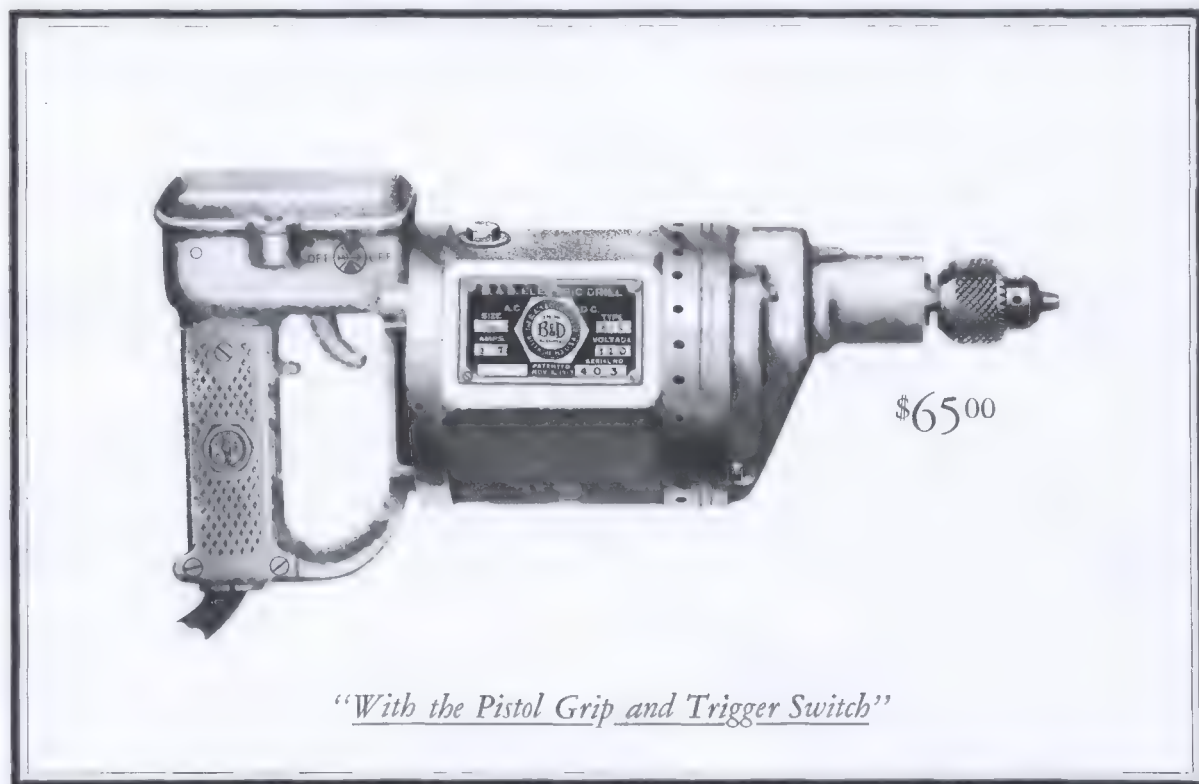
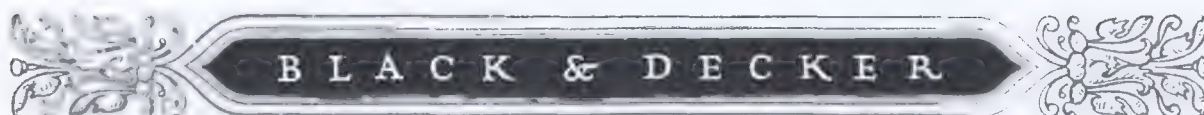
Net weight 5 lbs.
Shipping dimensions . . . 4 1/8" x 4 7/8" x 12 1/2"
Shipping weight 7 lbs.
Price for 110 volts \$28.00
220 or 32 volts 32.00

EXTRA EQUIPMENT

This drill can be used as a small bench grinder for sharpening drill bits, chisels, and doing other light grinding. Stand in which this drill can be quickly and easily fastened, grinding wheel and arbor, extra \$3.00

Operates on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW -that you can sharpen your drill bits and other small edged tools with the Black & Decker Quarter-Inch Portable Electric Drill, by using the Grinding Outfit described above?



"With the Pistol Grip and Trigger Switch"

5/16 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

THE 5/16" drill is complete with three-jaw geared-nut chuck for straight-shank drill bits up to 5/16", and 15 feet of duplex electric cable fitted with attachment plug.

This is the standard 5/16" drill used by garages, industrials, woodworkers and by many body builders, although to take care of the production requirements of some of the larger body-building shops we are prepared to supply a 5/16" Body Builders' Special.

The 5/16" drill illustrated above embodies the high Black & Decker ideals in every respect and, while light in weight, has all of the characteristics of design and construction of the larger drills. This is true throughout our line.

There are no "weak sisters." All Black & Decker units are equally serviceable when used within their rated capacities.

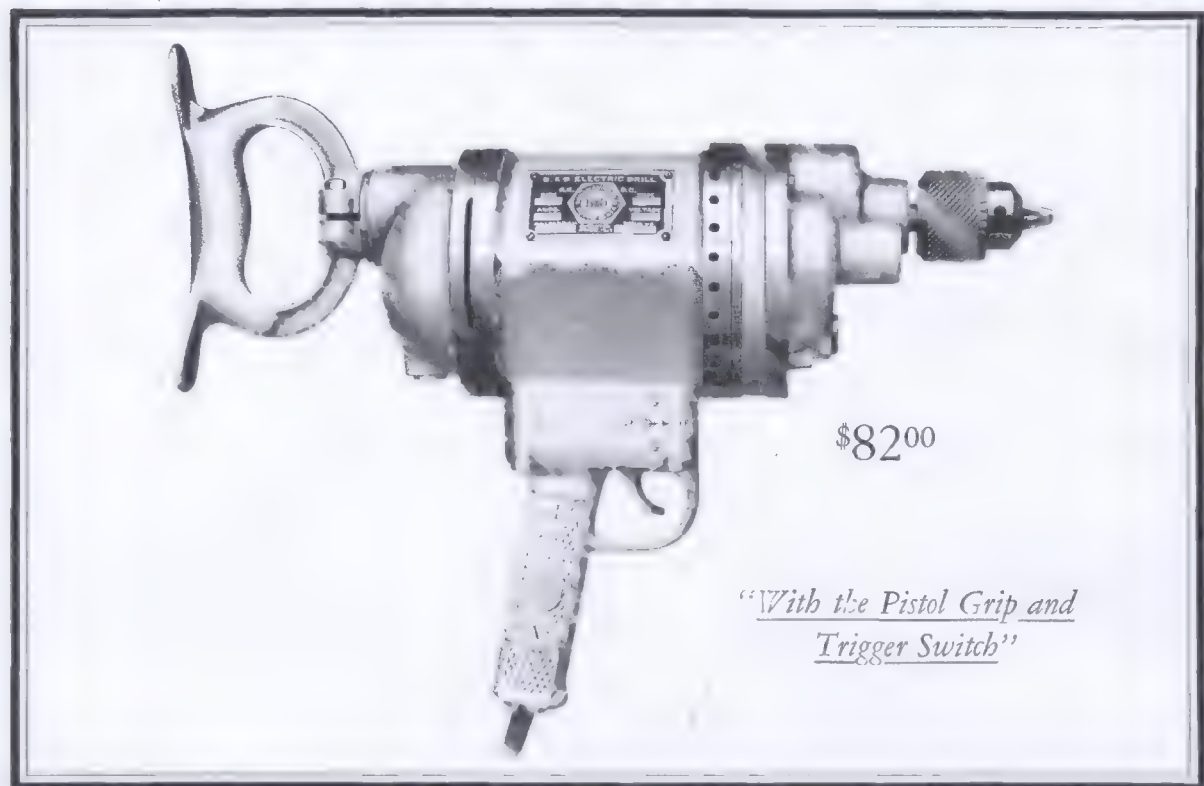
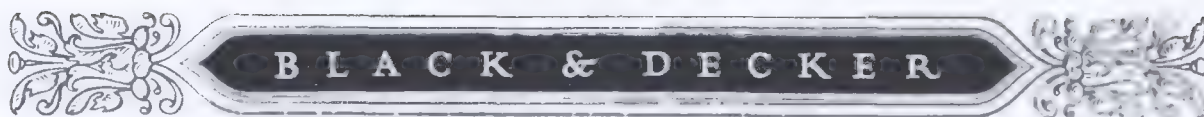
Capacity in steel	0 to 5/16"
Capacity in hardwood	0 to 7/16"
No-load speed	1200 R.P.M.
Net weight	7 lbs.
Shipping dimensions	8 1/2" x 6" x 18"
Shipping weight	15 lbs.
Price for 110 volts	\$65.00
220 or 32 volts	69.00

OPTIONAL SPEED

Can be supplied with speed of 1600 R.P.M. at extra charge of \$2.50

Operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW—that human living bone is drilled by surgeons with a Black & Decker Portable Electric Drill? This is done in making splices and attaching plates to broken or injured bones.



\$82⁰⁰

*"With the Pistol Grip and
Trigger Switch"*

HEAVY DUTY 3/8 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with combination spade handle and breast plate, three-jaw geared-nut chuck for straight-shank drill bits up to 3/8", 15 feet of duplex electric cable and attachment plug.

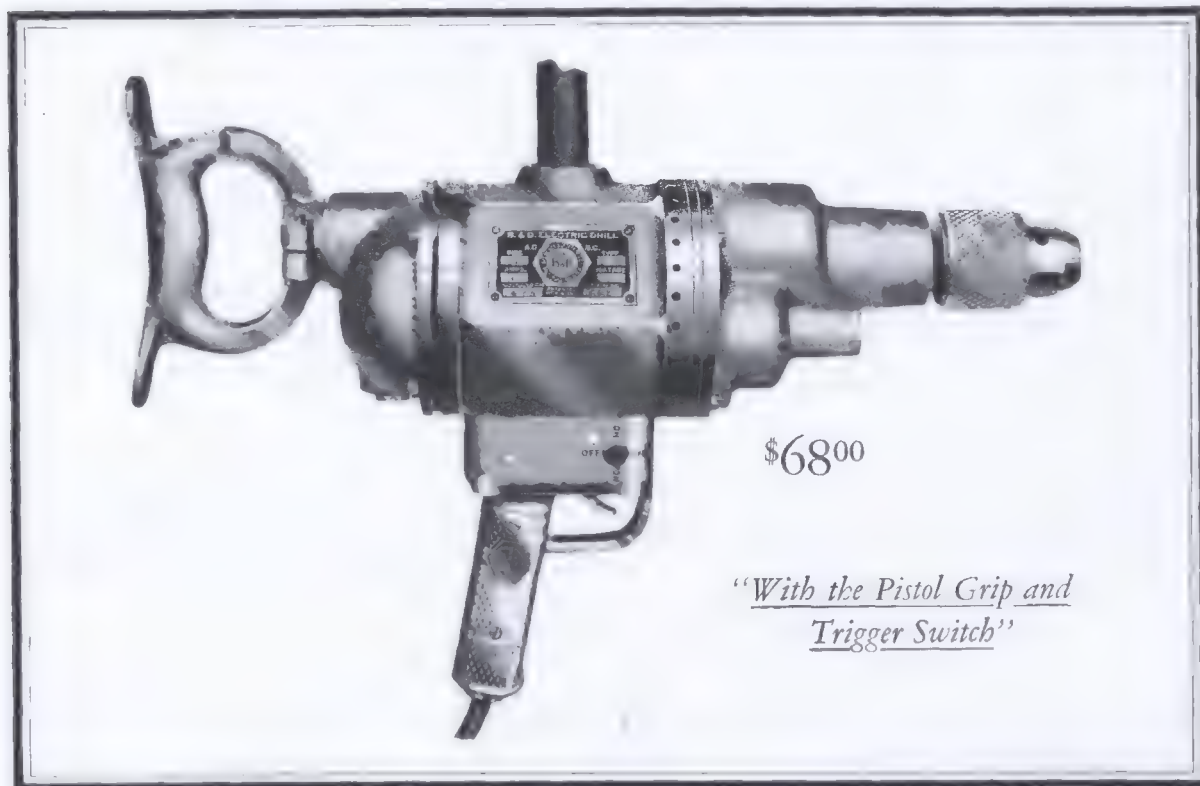
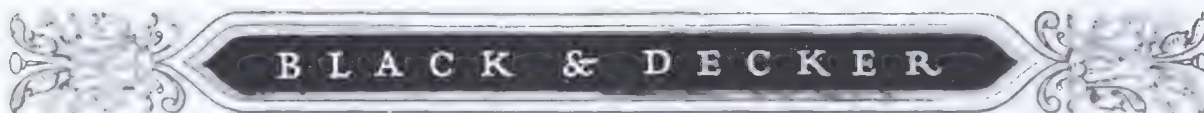
Light in weight, powerful motor, geared for fast drilling. Note speed of 900 R.P.M.

Capacity in steel	0 to 3/8"
Capacity in hardwood	0 to 9/16"
No-load speed	900 R.P.M.
Net weight	14 lbs.
Shipping dimensions	8" x 13" x 18"
Shipping weight	26 lbs.
Price for 110 volts	\$82.00
220 or 32 volts	86.00

Bench and Post Drill Stands to fit this Drill
are described on pages 16 and 17.

*Operate on Direct or Alternating Current and on Voltages
10% over or under those specified.*

DO YOU KNOW—that with a Black & Decker Portable Electric Drill you can quickly and easily
drill into logs to ascertain whether they are sound?



SPECIAL 1/2 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with combination spade handle and breast plate, three-jaw geared-nut chuck for straight-shank drill bits up to 1/2", 15 feet of duplex electric cable with attachment plug, and detachable side handle.

Capacity in steel 0 to 1/2"
Capacity in hardwood 0 to 3/4"
No-load speed 475 R.P.M.

Net weight 15 lbs.
Shipping dimensions 8" x 13" x 18"
Shipping weight 27 lbs.
Price for 110 volts \$68.00
220 or 32 volts 72.00

EXTRA EQUIPMENT

Feed Screw, extra \$3.50
Breast Plate, extra 1.00

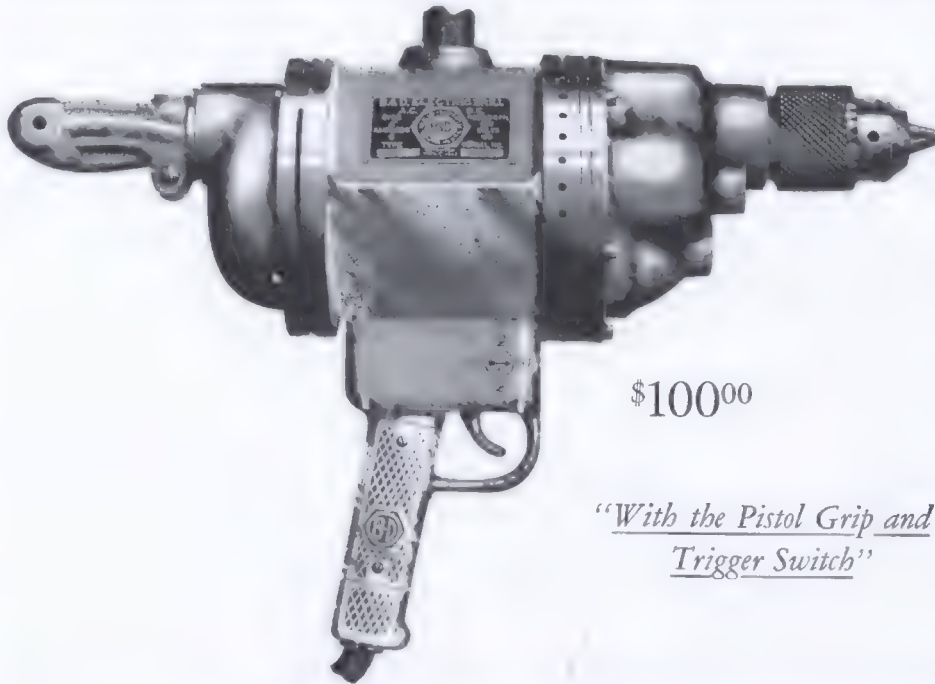
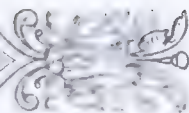
Bench and Post Drill Stands to fit this Drill
are described on pages 16 and 17.

*Operate on Direct or Alternating Current and on Voltages
10% over or under those specified.*

DO YOU KNOW that in a recent survey it was found that there are 666 uses for
Portable Electric Drills in automotive repair shops:



BLACK & DECKER



\$100⁰⁰

*"With the Pistol Grip and
Trigger Switch"*

HEAVY DUTY 1/2 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with combination spade handle and breast plate, three-jaw geared-nut chuck for straight-shank drill bits up to 1/2", 15 feet of duplex electric cable, attachment plug and detachable side handle.

Capacity in steel 0 to 1/2"
Capacity in hardwood 0 to 3/4"
No-load speed 600 R.P.M.

Net weight 21 1/2 lbs.
Shipping dimensions 8" x 13" x 18"
Shipping weight 33 lbs.
Price for 110 volts \$100.00
220 or 32 volts 104.00

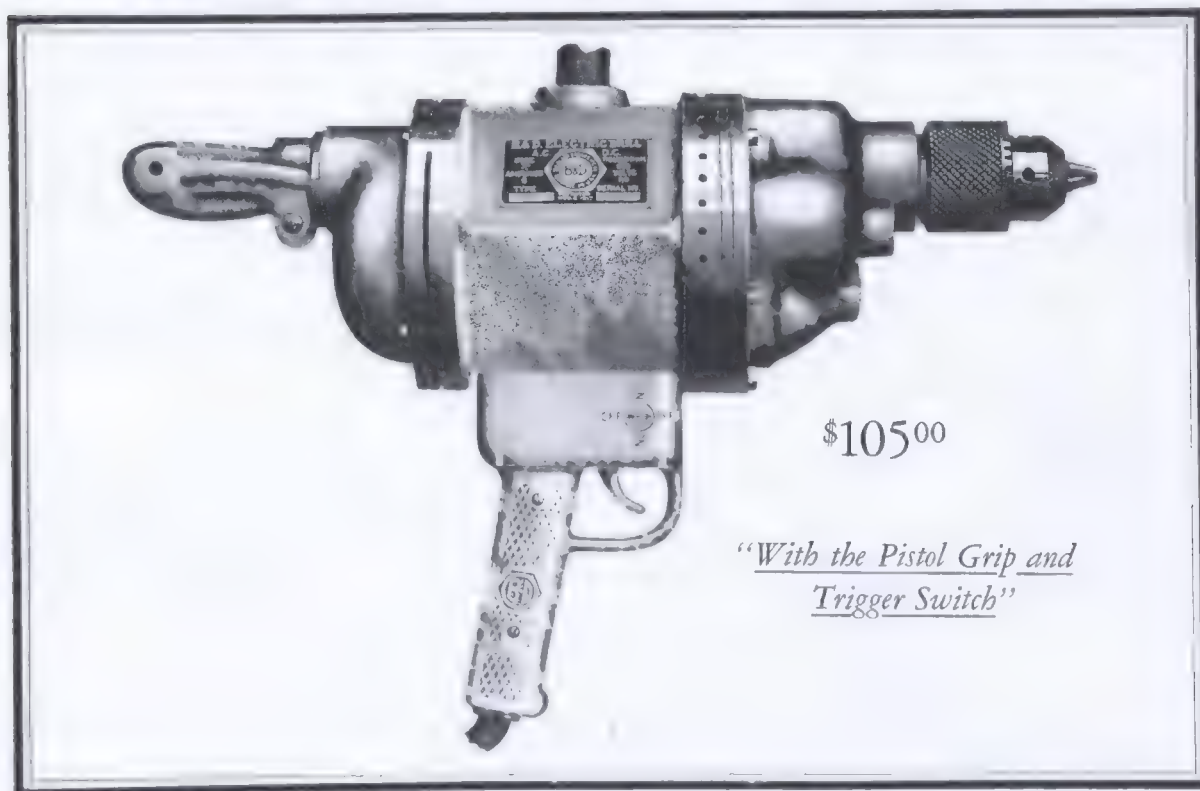
EXTRA EQUIPMENT

Feed Screw, extra \$3.50
Breast Plate, extra 1.00

Bench and Post Drill Stands to fit this Drill
are described on pages 16 and 17.

*Operate on Direct or Alternating Current and on Voltages
10% over or under those specified.*

DO YOU KNOW—that you can use Black & Decker Portable Electric Drills of the Special 1/2" size or larger for driving cylinder-reboring and grinding tools?



\$105⁰⁰

*"With the Pistol Grip and
Trigger Switch"*

5/8 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with combination spade handle and breast plate, three-jaw geared-nut chuck for straight-shank drill bits up to $\frac{5}{8}$ ", 15 feet of duplex electric cable, attachment plug and detachable side handle.

Capacity in Steel	$\frac{1}{8}$ to $\frac{5}{8}$ "
Capacity in hardwood	$\frac{1}{8}$ to $\frac{7}{8}$ "
No-load speed	475 R.P.M.
Net weight	22 lbs.
Shipping dimensions	8" x 13" x 18"
Shipping weight	34 lbs.
Price for 110 volts	\$105.00
220 or 32 volts	109.00

EXTRA EQUIPMENT

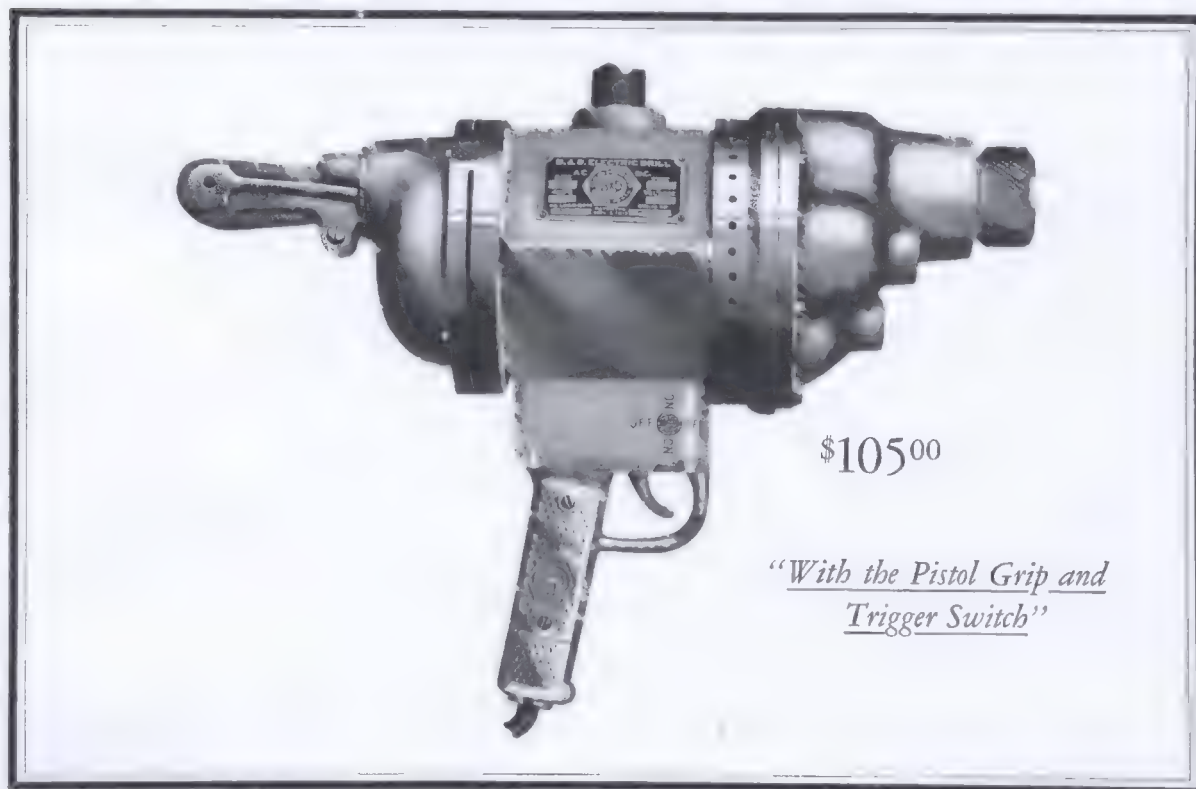
Feed Screw, extra	\$3.50
Breast Plate, extra	1.00

General auto- and truck-repair work requires a comparatively slow-speed drill, because of the ever-increasing toughness of the steel that is being used on autos and trucks in order to secure strength with minimum weight. The Black & Decker $\frac{5}{8}$ " drill is usually the choice of the larger garages and service stations.

Bench and Post Drill Stands to fit this Drill are described on pages 16 and 17.

Operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW—that you can drill large-diameter holes in wood with Black & Decker Portable Electric Drills by using a single-flute ship auger with a plain pilot (not a screw pilot)



9/16 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with combination spade handle and breast plate, No. 1 Morse Taper Socket for taper-shank drill bits from $\frac{1}{16}$ " to $\frac{9}{16}$ ", 15 feet of duplex electric cable, attachment plug and detachable side handle.

The No. 1 Morse Taper Socket is in a removable sleeve, which is held in the drill spindle by means of a large knurled nut. Tang of drill bit protrudes slightly beyond the end of the sleeve, and by removing sleeve holding drill bit from the drill spindle, the drill bit can be easily removed from the sleeve by a tap on protruding end of drill-bit tang.

Can be used with straight-shank bits by using No. 1 Morse Taper Arbor fitted with $\frac{1}{2}$ -inch chuck.

Capacity in steel	$\frac{1}{16}$ " to $\frac{9}{16}$ "
Capacity in hardwood	$\frac{1}{16}$ " to $\frac{3}{4}$ "
No-load speed	600 R.P.M.
Net weight	21 lbs.
Shipping dimensions	8" x 13" x 18"
Shipping weight	32 lbs.
Price for 110 volts	\$105.00
220 or 32 volts	109.00

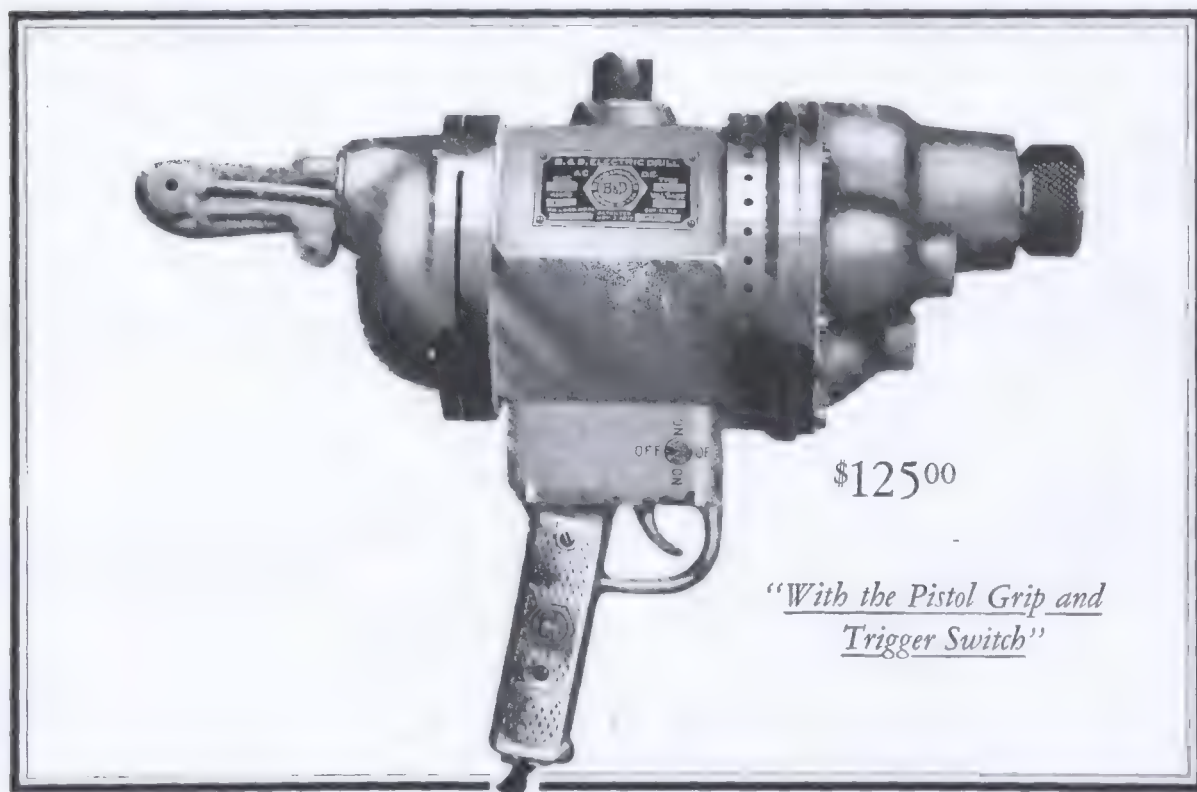
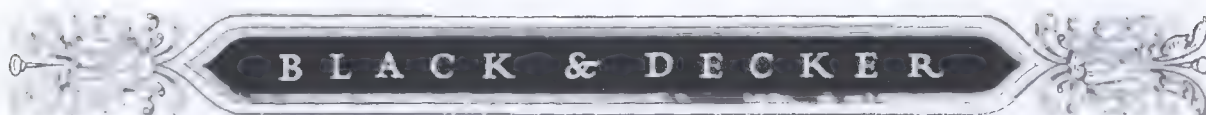
EXTRA EQUIPMENT

Feed Screw, extra	\$3.50
Breast Plate, extra	1.00
Spindle sleeve for short taper-shank drills, extra	3.00

Bench and Post Drill Stands to fit this Drill are described on pages 16 and 17.

Operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW—that you can drill holes in automobile frames for attaching snubbers without removing the wheels by using an extension chuck in your Black & Decker Portable Electric Drill?



\$125⁰⁰

*"With the Pistol Grip and
Trigger Switch"*

7/8 INCH BLACK & DECKER PORTABLE ELECTRIC DRILL

DRILL complete with combination spade handle and breast plate, No. 2 Morse Taper Socket for taper-shank drill bits from $\frac{3}{8}$ " to $\frac{1}{2}$ ", 15 feet of duplex electric cable, attachment plug and detachable side handle.

The No. 2 Morse Taper Socket, in the form of a removable sleeve, is secured in the drill spindle by means of a large knurled nut, making socket easily removable from spindle. Drill shank protrudes slightly beyond end of taper socket and light tap on end frees it from socket.

Can be used with No. 1 Morse Taper-Shank Bits by using No. 1 to 2 Morse Taper Sleeve, or can be used with straight-shank bits by using No. 2 Morse Taper Arbor fitted with $\frac{5}{8}$ " chuck.

Drilling capacity in steel $\frac{1}{8}$ " to $\frac{7}{8}$ "
Reaming capacity in steel $\frac{1}{8}$ " to $\frac{3}{4}$ "

Capacity in hardwood	$\frac{1}{8}$ " to $1\frac{1}{2}$ "
Capacity in soft coal	$\frac{1}{8}$ " to $1\frac{3}{4}$ "
No-load speed	350 R.P.M.
Net weight	25 lbs.
Shipping dimensions	8" x 13" x 18"
Shipping weight	35 lbs.
Price for 110 volts	\$125.00
220 or 32 volts	129.00

EXTRA EQUIPMENT

Can be supplied with speed of 250 R.P.M. at an extra cost of	\$2.50
Feed Screw, extra	3.50
Breast Plate, extra	1.00
Spindle sleeve for short taper-shank drills, extra	3.50

Bench and Post Drill Stands to fit this Drill are described on pages 16 and 17.

*Operate on Direct or Alternating Current and on
Voltages 10% over or under those specified.*

DO YOU KNOW -that the Black & Decker $\frac{7}{8}$ " Drill is a favorite among bridge builders because of its light weight?



BLACK & DECKER COAL DRILLING OUTFITS

SHOT holes can be drilled faster and cheaper by using an electric drill.

The Black & Decker $\frac{7}{8}$ " and $1\frac{1}{4}$ " Portable Electric Drills can be supplied with the following equipment:

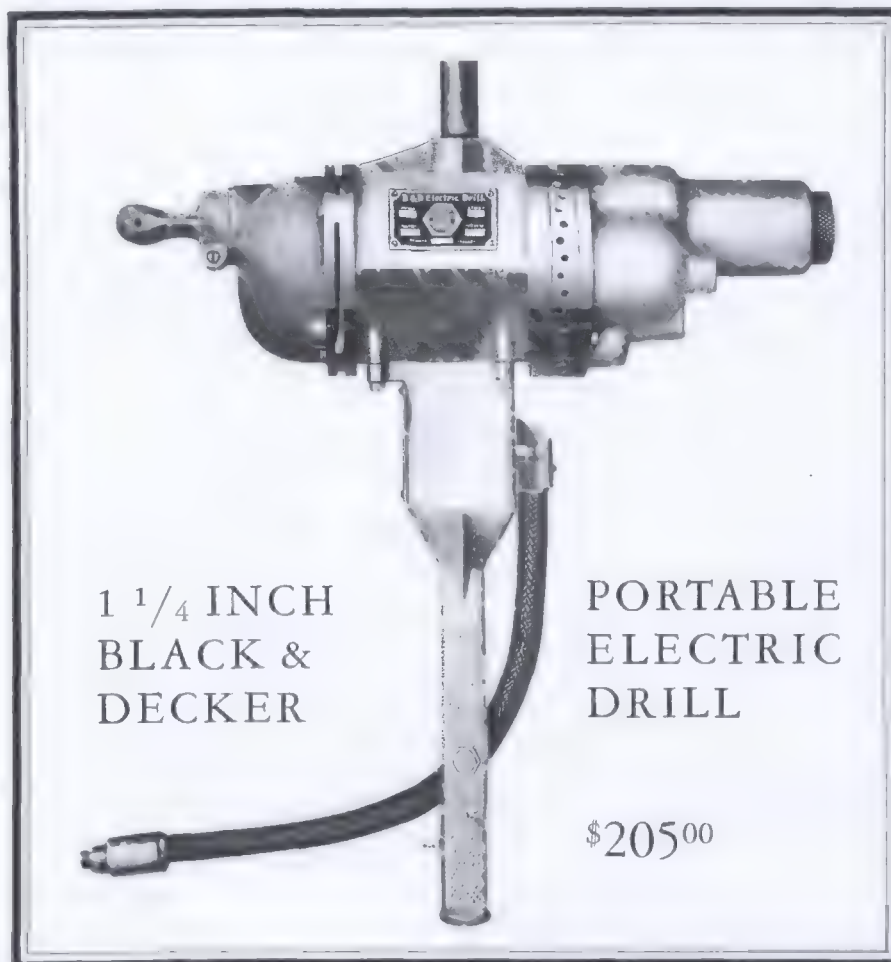
One auger socket for flat taper shank bits.
 One $1\frac{3}{4}$ " diameter flat shank fishtail bits 4' long.
 One $1\frac{3}{4}$ " diameter flat shank fishtail bits 6' long.
 One $1\frac{3}{4}$ " diameter flat shank fishtail bits 8' long.
 One long detachable side handle for $\frac{7}{8}$ " drill, spade handle for $1\frac{1}{4}$ " drill.
 One large breast plate.

The $\frac{7}{8}$ " size is essentially a one-man drill and will cover a wide range.

The $1\frac{1}{4}$ " is a two-man drill, very powerful and recommended where formation is hard or where extra fast work is desired.

Price or	$\frac{7}{8}$ "	$1\frac{1}{4}$ "
110 volts	\$140.00	\$220.00
220 volts	144.00	215.00
250 volts	144.00	220.00

DO YOU KNOW—that you can drill shot holes in soft coal by using the Black & Decker Coal Drilling Outfit?



1 1/4 INCH
BLACK &
DECKER

PORTABLE
ELECTRIC
DRILL

\$205⁰⁰

DRILL complete with spade handle, No. 3 Morse Taper Socket for taper-shank drill bits from 5/8" to 1 1/4", 15 feet of duplex electric cable, attachment plug and detachable side handle.

The No. 3 Morse Taper Socket is in a removable sleeve, which is held in the drill spindle by means of a large knurled nut. Tang of drill bit protrudes slightly beyond the end of the sleeve, and by removing sleeve holding drill bit from the drill spindle, the drill bit can be easily removed from the sleeve by a tap on protruding end of drill-bit tang.

Can be used with No. 2 Morse Taper-Shank Bits by using No. 2 to 3 Morse Taper Sleeve.

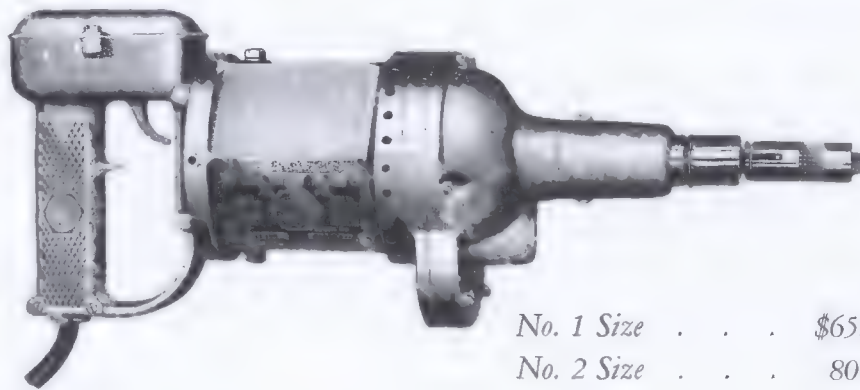
Drilling capacity in steel	3/4" to 1 1/4"
Reaming capacity in steel	3/4" to 3/8"
Capacity in hardwood	up to 2 1/2"
No-load speed	300 R.P.M.
Net weight	55 lbs.
Shipping dimensions	12" x 14" x 26"
Shipping weight	75 lbs.
Price for 110 volts	\$205.00
220 volts	200.00

EXTRA EQUIPMENT

Feed Screw, extra	\$8.00
Spindle sleeve for short taper-shank drills, extra	5.00

Operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW—that because of their extreme portability Black & Decker Portable Electric Drills are ideal for reaming matched holes in structural iron and steel?



No. 1 Size . . . \$65.00
No. 2 Size . . . 80.00

"With the Pistol Grip and Trigger Switch"

ELECTRIC SCREWDRIVER AND SOCKET WRENCH

COMPLETE with 15 feet of duplex electric cable with attachment plug, 2 screwdriver bits with centering sleeves.

A powerful, portable, electric-motor-driven tool for driving screws and nuts. Similar in all essentials to the well-known Black & Decker Portable Electric Drills, except that it is provided with a clutch to prevent breaking screws or bolts by drawing up too tight.

Manufactured in two sizes. The No. 1 is capable of driving a No. 14 wood screw 2½ inches long in hardwood. The No. 2 is capable of driving a No. 20 wood screw 4 inches long in hardwood.

These capacities contemplate the use of proper size lead holes.

	No. 1 Size	No. 2 Size
No-load speed . . .	350 R.P.M.	350 R.P.M.
Net weight . . .	7 lbs.	8½ lbs.
Shipping dimensions	4½"x5½"x12½"	8"x13"x18"
Shipping weight . .	10 lbs.	21 lbs.
Price for 110 volts .	\$65.00	\$80.00
220 or 32 volts	69.00	84.00

EXTRA EQUIPMENT

Either size Screwdriver can also be supplied with speeds of 700 R.P.M. or 1000 R.P.M. as specified, at extra charge of \$2.50.

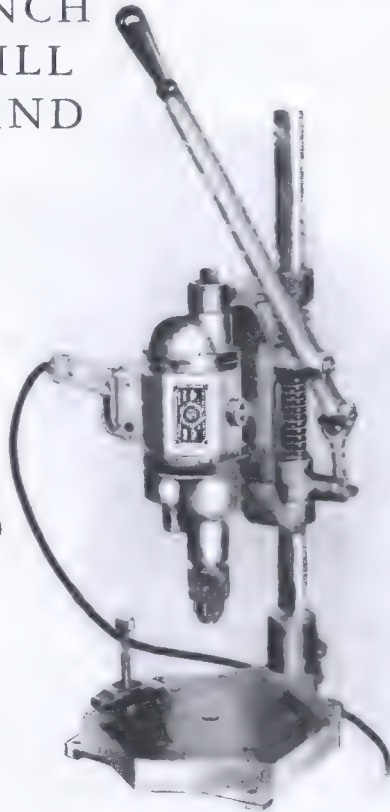
Extra Screwdriver Bits without centering sleeve, each	\$0.75
Extra Screwdriver Bits with centering sleeve, each	1.50
Solid Socket Wrenches, each	1.50
Adapters to fit Walden-Worcester or Mossberg Socket Wrenches, each	1.50
Screwdriver fitted with special spindle carrying ⅜" three-jaw chuck (without clutch), add to regular price	2.50

Operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW—that the great popularity of the closed automobile body has created an increasing use of Electric Screwdrivers?

BENCH DRILL STAND

\$28⁰⁰

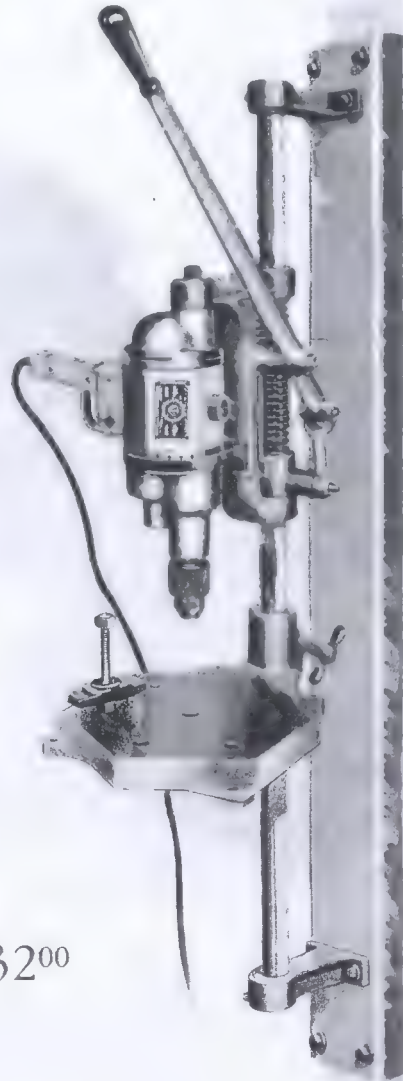


Illustrations show Black & Decker Drill Stands complete with Black & Decker Portable Electric Drill.

When Stand complete with Portable Electric Drill is desired, this should be specified, and price of Portable Electric Drill added to price of Stand.

POST DRILL STAND

\$32⁰⁰



DO YOU KNOW --that Black & Decker Drill Stands are ideal for drilling out terminals in storage batteries



POST AND BENCH DRILL STANDS

TAKE $\frac{3}{8}$ ", Special $\frac{1}{2}$ ", Heavy-Duty $\frac{1}{2}$ ", $\frac{9}{16}$ ", $\frac{5}{8}$ " and $\frac{7}{8}$ " Black & Decker Portable Electric Drills, which can be quickly and easily attached and detached. When ordering specify size drill to be used with stand.

Bracket carrying drill can be raised or lowered or swung around on vertical column and is secured in any desired position by means of split collar and clamping screw. Weight of drill supported by spring.

DIMENSIONS AND WEIGHTS OF BLACK & DECKER DRILL STANDS

	<i>Post Drill Stand</i>	<i>Bench Drill Stand</i>
Height (over all)	46"	30"
Vertical adjustment of drill	25 $\frac{1}{4}$ "	12"
Drilling radius (distance from center of drill bit to circumference of vertical column)	7"	7"
Horizontal adjustment of drill	180°	360°
Feed (vertical travel of drill when operated by feed lever)	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "
Net weight	75 lbs.	50 lbs.
Shipping dimensions	19" x 14" x 56"	9" x 13" x 32
Shipping weight	135 lbs.	83 lbs.
Price	\$32.00	\$28.00

STANDARD EQUIPMENT

Post Drill Stand—Stand complete with adapter for Black & Decker Special $\frac{1}{2}$ " Drill, work-clamp and stud, 4 lag screws. Shipped on board 1 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ " x 52".

Bench Drill Stand—Stand complete with adapter for Black & Decker Special $\frac{1}{2}$ " Drill, work-clamp and stud, 4 lag screws.

EXTRA EQUIPMENT

Standard brackets hold vertical column of Post-Drill Stand 5" from post or wall; 8" brackets can be supplied, if specified, at extra charge of \$1.50.

Extra-length vertical columns will be supplied at extra charge of \$1.50 for each extra foot of length.

Extra Adapter Blocks, each \$2.50

DO YOU KNOW that you can drill and rout printing plates with a Black & Decker Post or Bench Drill Stand?



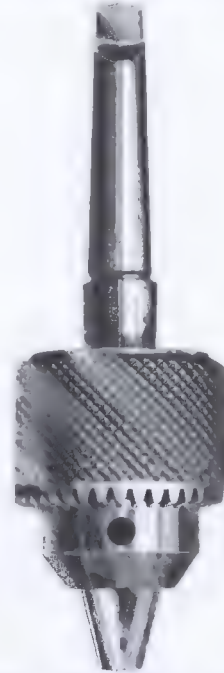
BLACK & DECKER



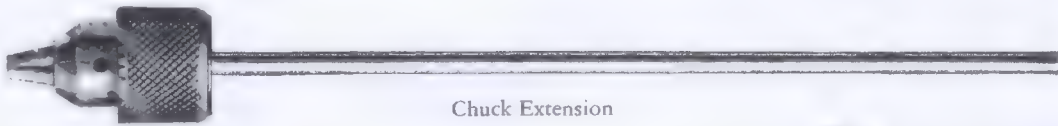
ATTACHMENTS
*for Black & Decker
Portable Electric Drills*



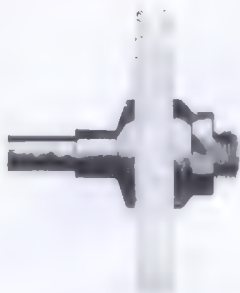
No. 1 to 2 or No. 2 to 3
Morse Taper Sleeve



No. 1 or No. 2 Morse Taper
Arbor with Chuck



Chuck Extension



Grinding Wheel Arbor



Drift Key

SEE DESCRIPTION AND PRICES ON FOLLOWING PAGE



ATTACHMENTS

FOR

BLACK & DECKER PORTABLE ELECTRIC DRILLS

No. 1 TO 2 MORSE TAPER SLEEVE

With this sleeve the Black & Decker $\frac{7}{8}$ " Portable Electric Drill may be used with drill bits having No. 1 Morse Taper Shanks
Price \$1.25

No. 2 TO 3 MORSE TAPER SLEEVE

With this sleeve the Black & Decker $1\frac{1}{4}$ " Portable Electric Drill may be used with drill bits having No. 2 Morse Taper Shanks.
Price \$1.75

No. 1 MORSE TAPER ARBOR WITH $\frac{1}{2}$ "-INCH CHUCK

This makes it possible to use the Black & Decker $\frac{9}{16}$ " Portable Electric Drill with straight-shank bits up to $\frac{1}{2}$ ".
Price \$8.25

No. 2 MORSE TAPER ARBOR WITH $\frac{5}{8}$ "-INCH CHUCK

This makes it possible to use the Black & Decker $\frac{7}{8}$ " Portable Electric Drill with straight-shank bits up to $\frac{5}{8}$ ".
Price \$8.25

DRIFT KEY

To be used in separating taper-shank bits from Morse Taper Sleeves.
Price \$0.30

CHUCK EXTENSIONS (12" or 24")

For work that would otherwise be inaccessible, such as the installation of snubbers on automobiles. Can be used with Black & Decker Portable Electric Drills of $\frac{1}{2}$ " and larger sizes. Takes straight-shank bits up to $\frac{1}{2}$ ".
Price \$10.00
Extension without chuck 2.50

GRINDING WHEEL ARBOR

To make it possible to do light grinding with any Black & Decker Portable Electric Drill which is equipped with chuck. (Wheels to fit arbor should have $\frac{1}{2}$ " holes.)
Price \$1.50

Grinding wheel 3" diameter x $\frac{1}{4}$ " face x $\frac{1}{2}$ " hole to fit this arbor.
Price \$0.50

FEED SCREWS

To obtain feeding pressure greater than obtainable by body pressure, or for obtaining feeding pressure in restricted places. To fit Special $\frac{1}{2}$ ", Heavy-Duty $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{9}{16}$ ", and $\frac{7}{8}$ " Drills.
Price \$3.50

To fit $1\frac{1}{4}$ " Drill.
Price \$8.00

BREAST PLATE

To fit $\frac{3}{8}$ ", Special $\frac{1}{2}$ ", Heavy-Duty $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{9}{16}$ " and $\frac{7}{8}$ " Black & Decker Portable Electric Drills.
Price \$1.00

NOTE: The drills mentioned above are equipped with Combination Spade Handle and Breast Plate, which are most convenient for average use, but in special instances where these drills are to be used continuously for extra-heavy work, the independent breast plate is recommended.

SPECIAL NOTE

Extra Chuck Keys for any size Black & Decker Portable Electric Drills.
Price \$0.50



HOW TO GRIND DRILL BITS



THE drilling of holes with Portable Tools has progressed amazingly during the past few years. There can be no comparison between the old-fashioned hand-operated machine which was used a few years ago, and the modern Portable Electric Drill using Twist Drills, both for speed and accuracy. The modern Twist Drill is a comparatively simple tool, and will do fair work under bad conditions.

An improperly ground drill will not only make the wrong size hole, but will require many times the pressure to force it through the material being worked on than if properly ground.

There are, of course, many elaborate machines on the market for sharpening Twist Drills accurately, but with a little care and practice they can be sharpened by hand to give very satisfactory results. The principal requirements are that both cutting lips be ground to the same angle with the center line of the drill (the

correct angle being 59° either side of the center line), and that the cutting lips be of the same length. If the angles are unequal, or the cutting lips of different lengths, the effect produced by the drill will be as shown in Figs. 1 and 2. In either case the hole produced by the drill will be too large.

Another important fea-

ture in drill grinding is to give the cutting edges the proper clearance, as with no clearance the drill will not cut at all, whereas too much clearance weakens the cutting edge. This may be better understood by referring to Fig. 3, which shows what is meant by clearance, and what it should be for drills which are used for steel and iron. Much less pressure is required to force a drill into the metal if, in addition to the clearance being correctly ground, the back of the lip of the drill is ground away, as shown in Fig. 4.

Another feature which sometimes interferes with fast and easy drilling is that of using a drill bit which has become so short that the point is entirely too thick. It will be understood that the point of a drill does practically no cutting, but is forced into the metal by main strength, and in the manufacturing of drills, the depth of flute is made



Figure 1
Lips of different lengths.

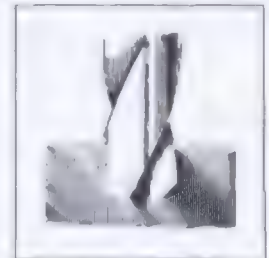


Figure 2
Lips of different angles.



Figure 3
12 degrees clearance angle like top cut is correct, when angle of point will look like bottom cut.

less toward the shank of the drill, so that when drill is ground away to half its length the point is much thicker than when new. This makes it desirable to thin the point of an old or short drill, thus reducing the pressure necessary to force it into the work. This is shown by Fig. 5, it being understood that for steel work the point only should be thin, avoiding as much as possible grinding of a flat on the cutting edge of the lip.

For soft metals, like brass or bronze, or very thin metal, a drill with the lips ground flat is decidedly an advantage, as it obviates the possi-

bility of the drill hooking into the work as the point goes through.

Summarizing the above remarks, there are three essentials in drill grinding: The correctness of the angles, the length of the lips, and the proper clearance, the first two main requirements being readily determined by the use of a simple gauge, which can be secured from any tool dealer, as illustrated in Fig.

6. The clearance can be checked up by resting the point of the drill on a plate and rotating it slowly against the edge of a steel rule held vertically, as shown in Fig. 7, noting that the distance at the cutting edge must always be nearer the plate than any other part of the lip.

Our grinding machines are furnished with wheels of two degrees of fineness, which are suited to general grinding work such as is met with in Machine Shops. If, however, considerable drill grinding is to be done, we advise the use of wheels equivalent to Norton Alundum, grain No. 46, grade L or M, for drills $\frac{1}{4}$ " or over; for smaller drills, Alundum, grain No. 60, grade L or M. These wheels are too soft for general work, but are better adapted to grinding twist drills and

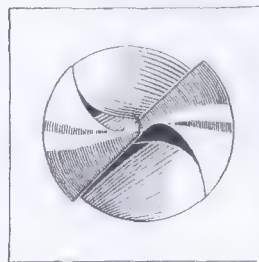


Figure 5
Drill with point thinned. Care should be taken that the cutting edges are not ground off.

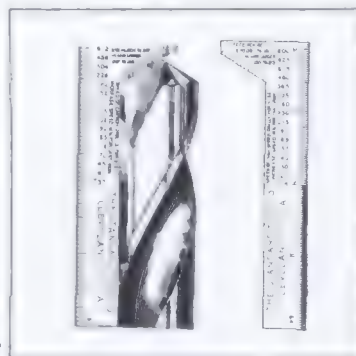


Figure 6
Gauge for checking angles and length of cutting lips.

tools of that nature, being less likely to overheat the tool and draw its temper. For grinding high-speed drills the same general rule applies, but caution should be used in quenching high-speed drills in water when hot. Quenching in water frequently causes fine cracks, resulting in the edge crumbling off when drilling, and sometimes condemns the otherwise very efficient high-speed drill.

Unless a drill is in a very bad condition, we advise doing the sharpening on the side of the wheel, as it is almost impossible to secure accuracy when grinding on the face.

The face of the wheel should only be used when the drill bit has been broken, and it is wished to bring the point to approximately its proper shape. For thinning the points of drills, it is necessary that the wheel should have quite a sharp corner, so as to get into the bottom of the flute; the wheel-makers furnish special forms for this particular work.

An emery wheel dresser, with which the grinding wheels may be kept true and free from metallic particles, is very necessary to secure good results in grinding of any sort, this is particularly important in order to keep the grinding wheel balanced, which reduces vibration and consequent wear on the machine as well as improving the work the wheel will do.

NOTE: Never use anything but the highest-grade grinding wheels. All high-grade grinding wheels up to 8 inches are tested for 4000 R.P.M. or over and are so marked.

Never force the wheel on the spindle. If it binds at all, enlarge the hole until it goes on freely.

Always use blotting paper or other elastic washers between the flanges and the sides of the wheel.

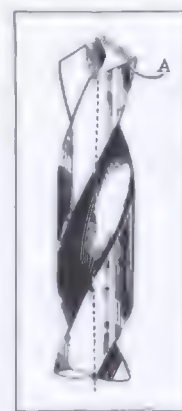


Figure 4
Additional relief ground away from point A requires less feed pressure.

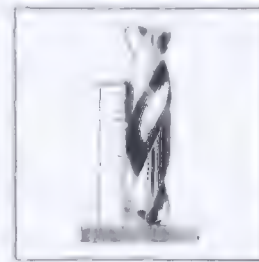
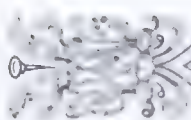
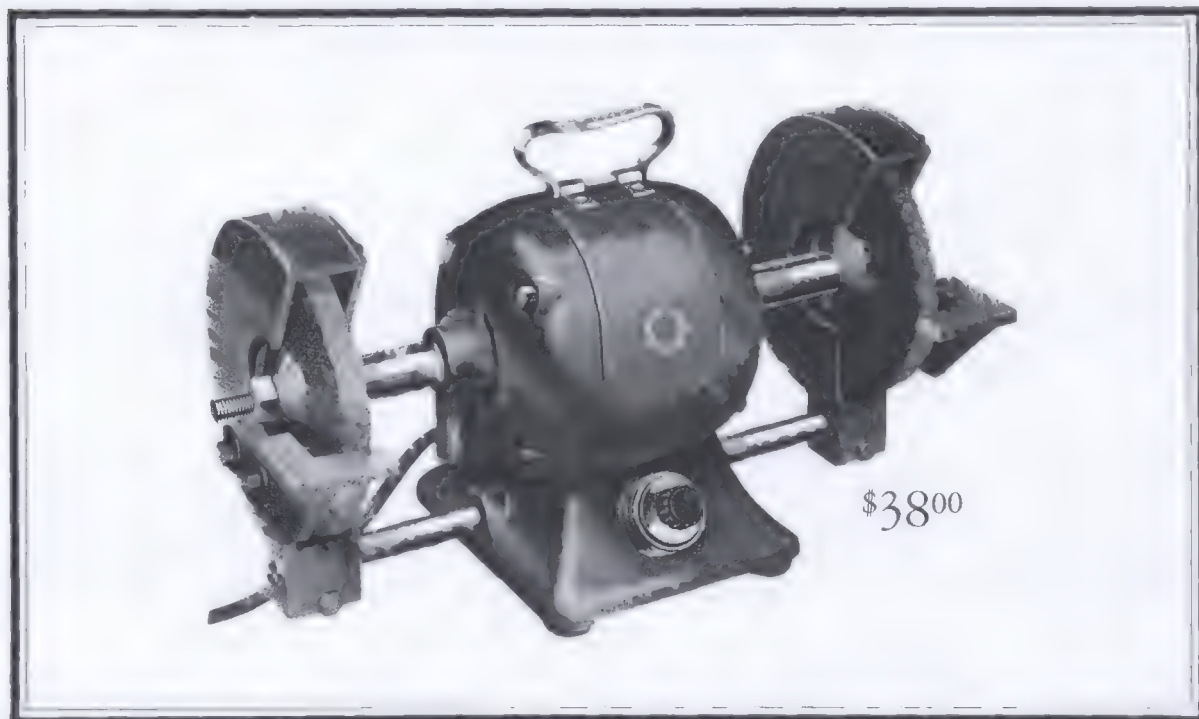


Figure 7
Checking clearance with steel rule. Cutting edge must be lowest point.



BLACK & DECKER



6-INCH BLACK & DECKER ELECTRIC BENCH GRINDER

COMPLETE as illustrated with two grinding wheels, one coarse and one fine, two wheel guards, two tool rests, electric cable fitted with attachment plug and electric switch.

This grinder has *not* a universal motor and current must be specified. Supplied for D.C. or A.C. Single Phase 40, 50 or 60 cycles.

This is a substantial two-wheel Electric Bench Grinder, provided with rubber pads and a carrying handle, making it particularly convenient for moving about. One-third horsepower, 3600 R.P.M. Totally enclosed to keep out abrasive dust.

Attractively finished in gray enamel.

Can be connected to an ordinary electric lamp socket and is shipped complete ready to run.

Size of wheels—6" diameter by $\frac{1}{2}$ " face by $\frac{1}{2}$ " hole.

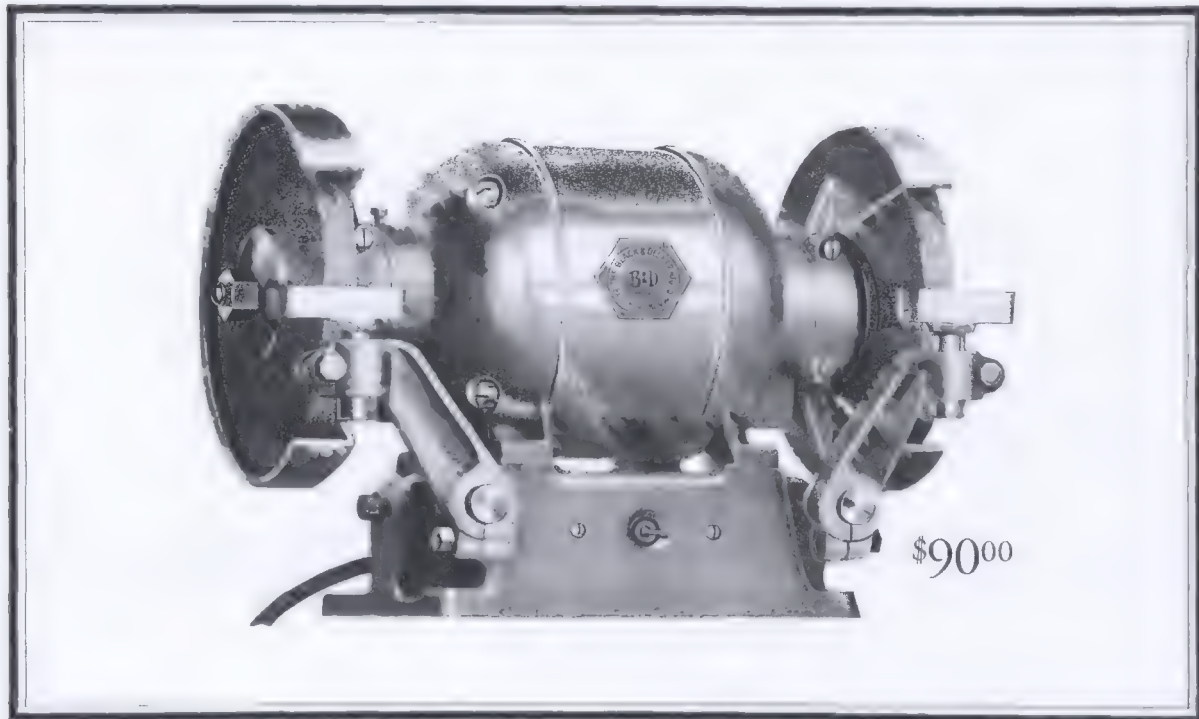
No-load speed	3600 R.P.M.
Net weight	38 lbs.
Shipping dimensions	18" x 9" x 10"
Shipping weight	50 lbs.
Price for 110 volts, 60 cycle A. C.	\$38.00
110 volts, 40 or 50 cycle A. C.	42.00
220 volts, 60 cycle A. C.	42.00
110, 220 or 32 volts D. C.	42.00

EXTRA EQUIPMENT

Threaded Taper Buffing Wheel Extension for right side	\$3.50
Threaded Taper Buffing Wheel Extension for left side (on special order only)	3.50

Not a Universal Motor. Specify whether for Direct or Alternating Current and if Alternating state whether 40, 50, or 60 cycles.

DO YOU KNOW—that golf clubs can be cleaned and beautifully polished in a few minutes with any of the Black & Decker Electric Grinders by using a wire-brush or buffing wheel, or both?



8-INCH BLACK & DECKER ELECTRIC GRINDER

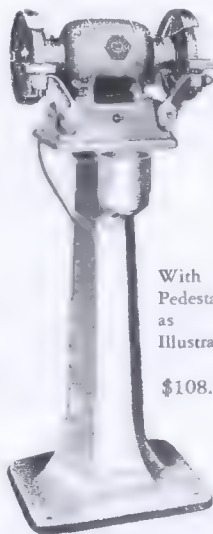
COMplete with two 8" grinding wheels, one coarse and one fine, two wheel guards, two adjustable tool rests and toggle switch in base.

This grinder has not a universal motor and current must be specified. Supplied for D.C., or A.C. single phase 50 or 60 cycles.

This is an exceptionally husky heavy-duty electric bench grinder. One-half horsepower, 3600 R.P.M. Totally enclosed to keep out abrasive dust.

Attractively finished in gray enamel.

Size of grinding wheels 8" diameter x $\frac{3}{4}$ " face x $\frac{5}{8}$ " hole.



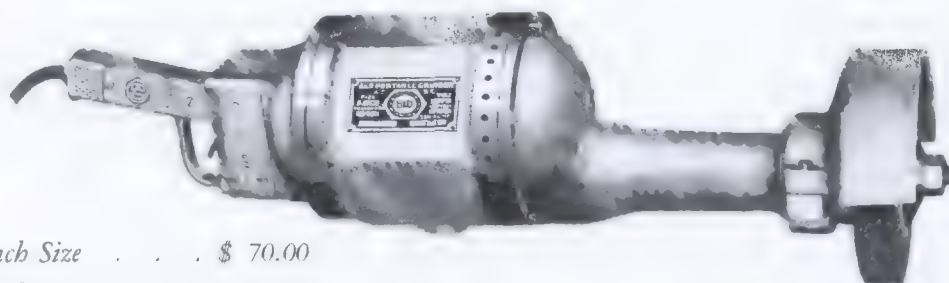
No-load speed	3600 R.P.M.
Net weight	75 lbs.
Shipping dimensions	20" x 15" x 12"
Shipping weight	105 lbs.
Distance between wheel centers	14½"
Price for 110 volts, 60 cycle A. C.	\$90.00
110 volts, 50 cycle A. C.	94.00
220 volts, 60 cycle A. C.	94.00
110 or 220 volts D. C.	94.00

EXTRA EQUIPMENT

With Pedestal as Illustrated	\$108.00
Pedestal with detachable water pot, extra	\$18.00
Threaded Taper Buffing-wheel Extension for right side, extra	5.00
Threaded Taper Buffing-wheel Extension for left side (on special order only), extra	5.00
<i>Not a Universal Motor. Specify whether for Direct or Alternating Current and if for Alternating state whether 50 or 60 cycles.</i>	

DO YOU KNOW—the correct way to sharpen a drill bit?
See Pages 20 and 21.

BLACK & DECKER



4-Inch Size . . . \$ 70.00
 5-Inch Size . . . 85.00
 6-Inch Size . . . 100.00

"With the Pistol Grip and Trigger Switch"

BLACK & DECKER PORTABLE ELECTRIC GRINDERS

COMPLETE with 15 feet of duplex electric cable with attachment plug, grinding wheel and wheel guard, except 4" Grinder, which is supplied without wheel guard.

These grinders embody all the essential characteristics of the Black & Decker Portable Electric Drills, together with best standard practice in grinder design and construction.

Sharpen tools, smooth casting and forging ridges and rough spots, smooth welds, shape fittings. With wire-brush wheel, rough tires, remove sand from castings, remove rust and paint from metal surfaces. With rag buffing wheel can be used for all sorts of polishing work.

EXTRA EQUIPMENT

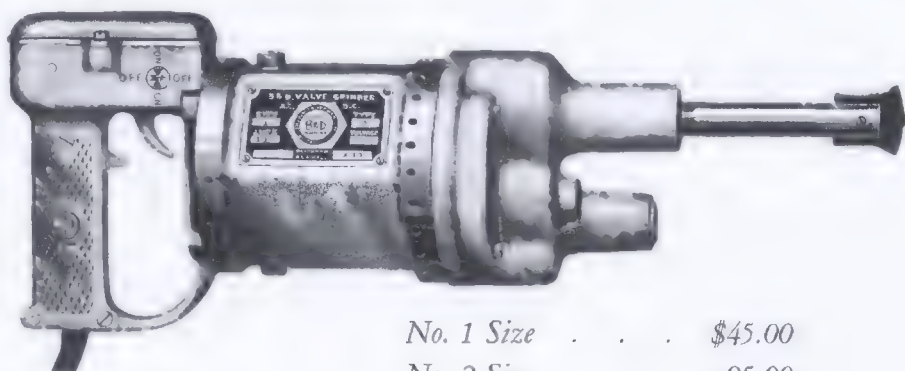
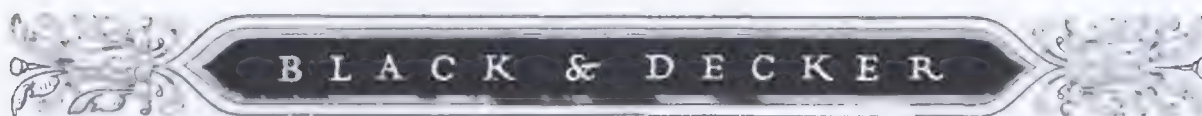
The following extra equipment can be supplied for the 6" Portable Electric Grinder only:

Aerial Spring and Eyebolt . . . \$1.00
 Wire-Brush Wheel . . . 2.00
 Rag Buffing Wheel50
 Cake of Polishing Compound15

	4-Inch Grinder	5-Inch Grinder	6-Inch Grinder
Horsepower . .	$\frac{1}{10}$	$\frac{1}{4}$	$\frac{1}{2}$
Size of grinding wheel . .	$\left\{ \begin{array}{l} 4" \times \frac{1}{2}" \text{ wide} \\ \times \frac{1}{2}" \text{ hole} \end{array} \right\}$	$\left\{ \begin{array}{l} 5" \times \frac{3}{4}" \text{ wide} \\ \times \frac{1}{2}" \text{ hole} \end{array} \right\}$	$\left\{ \begin{array}{l} 6" \times 1" \text{ wide} \\ \times \frac{3}{8}" \text{ hole} \end{array} \right\}$
No-load speed .	3500 R.P.M.	3400 R.P.M.	2900 R.P.M.
Net weight . .	7 lbs.	15 lbs.	22 lbs.
Shipping dimensions . .	$8\frac{1}{2}" \times 6" \times 18"$	$25" \times 9" \times 8"$	$25" \times 9" \times 8"$
Shipping weight	15 lbs.	27 lbs.	33 lbs.
Over-all length .	14"	22"	$23\frac{1}{4}"$
Greatest diam. .	$4\frac{1}{4}"$	$4\frac{5}{8}"$	$5\frac{5}{8}"$
Extension (gear case to center of wheel) . .	$3\frac{1}{4}"$	6"	7"
Price for 110 volts . . .	\$70.00	\$85.00	\$100.00
Price for 220 or 32 volts . .	74.00	89.00	104.00

These grinders all operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

DO YOU KNOW—that you can quickly and easily remove paper labels and ink markings from wood or metal boxes or drums with the Black & Decker 6-inch Portable Electric Grinder equipped with wire-brush wheel?



No. 1 Size . . . \$45.00
No. 2 Size . . . 85.00

"With the Pistol Grip and Trigger Switch"

BLACK & DECKER ELECTRIC VALVE GRINDERS

VALVE Grinder complete with 15 feet duplex electric cable, attachment plug, detachable bits, lift spring and box of grinding compound.

Same design and construction in all essentials as the portable electric drills, except that *the spindle oscillates back and forth* instead of revolving, this motion being obtained by means of a connecting rod, not with a cam or scotch yoke.

Equipped with the *"Pistol Grip and Trigger Switch,"* giving the same perfect control that is obtained in the portable electric drills.

Manufactured in two sizes: The No. 1 is used generally in garages, service stations and in many production plants. The No. 2, which is a larger and heavier machine, is designed for use on exceptionally large, heavy valves.

Operate on Direct or Alternating Current and on Voltages 10% over or under those specified.

	Size No. 1	Size No. 2
No-load speed (oscillations per minute)	500	400
Net weight . . .	8 lbs.	14 lbs.
Shipping dimensions	8½" x 6" x 18"	8" x 12" x 18"
Shipping weight . .	15 lbs.	22 lbs.
Price for 110 volts .	\$45.00	\$85.00
220 or 32 volts . .	49.00	89.00

EXTRA EQUIPMENT

Extra lift springs, per ½ dozen . .	\$0.60
Blank bits which can be filed to fit special valves, ½ dozen60
Buick Valve Cage Grinding Attachment	1.75

The Buick attachment is made in two sizes. ½" size—Used on cages for type B cars (1916 and 1917 models). Valve stems on these models are ⅝" in diameter. ⅝" size—Used on cages for types EH and K cars (all models since 1917). Valve stems on these models are ¾" in diameter.

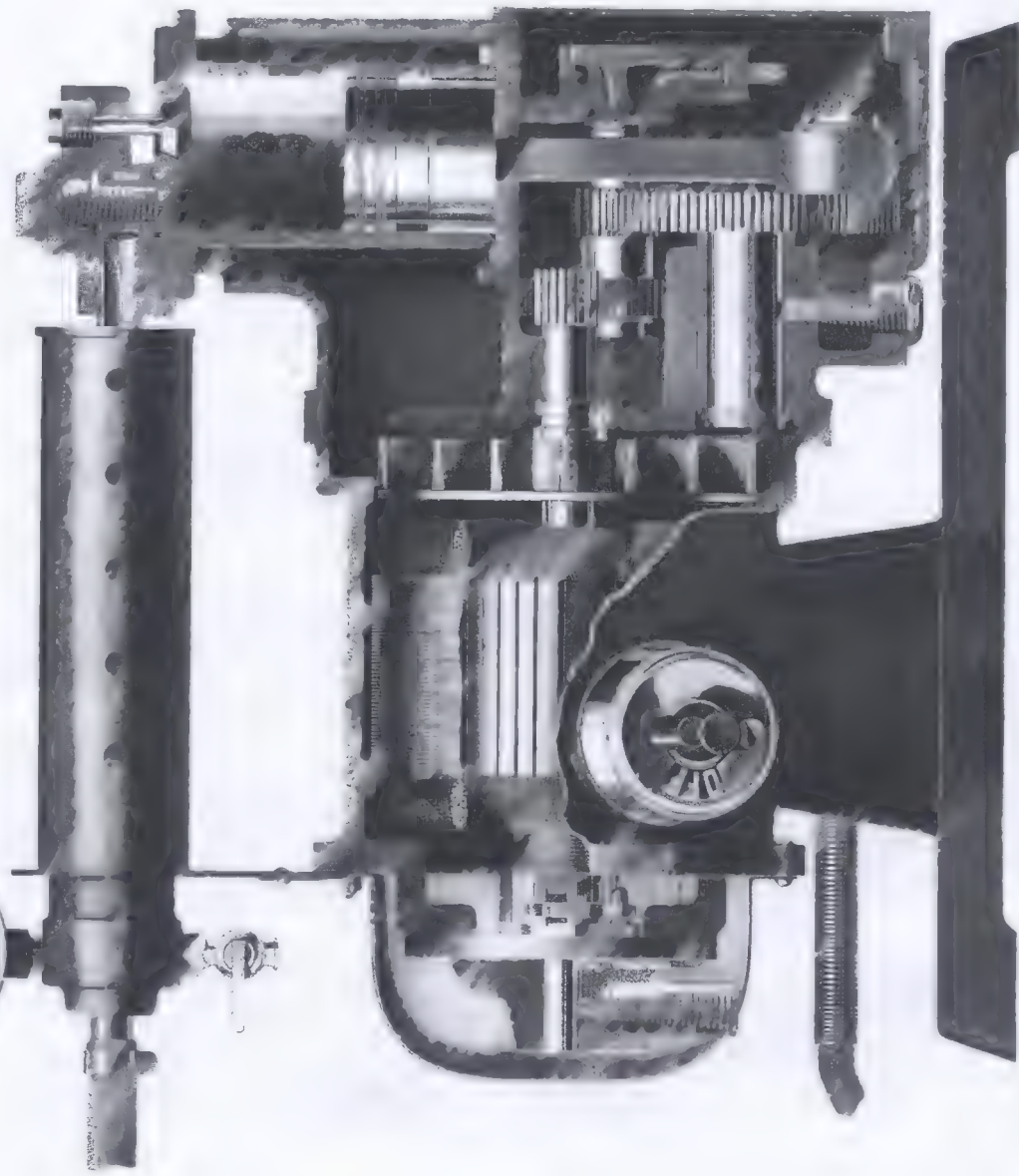


Buick
Valve Cage
Grinding
Attachment

DO YOU KNOW—that you can grind the seats of Buick valve cages, and valves as well, with the Black & Decker Electric Valve Grinder and Buick Valve Cage Grinder?



SECTIONAL VIEW OF BLACK & DECKER
No. 2 ELECTROFLATER ELECTRIC COMPRESSOR



No. 2 LECTROFLATER ELECTRIC COMPRESSOR



CAPACITY

No. 2—Two cubic feet of free air per minute. Maximum guaranteed pressure 150 pounds.

MOTOR—One-half horsepower.

Motors are of the multipolar type, designed and built specially for *Black & Decker* Lectroflaters. Field and armature are built up of insulated sheet steel laminations of high permeability. Motors are series compensated wound and operate on either direct current or alternating current of 25, 40 or 60 cycles, on any two wires of a three-phase circuit.

HOUSING

Motor, gear train and compressor mounted in one housing, arranged with easily removable covers, making machines unusually accessible.

CYLINDER

Gray iron casting tested under high air pressure.

VALVES

Automobile poppet type, individually ground to perfect seats, tested under high air pressure.

PISTON

Special aluminum alloy the same as is used in airplane and high grade automobile engines. The light weight thus obtained reduces inertia and consequent vibration, improving the operation of the machines and their wearing qualities.

PISTON RINGS

Six ground steel rings on each piston, three each in two grooves.

GEARING

Gears are of generous width, heat-treated and are mounted on shafts ground to size, running in extra large bronze bearings. Gear train operates in grease in a grease-tight compartment like an automobile transmission.

COOLING

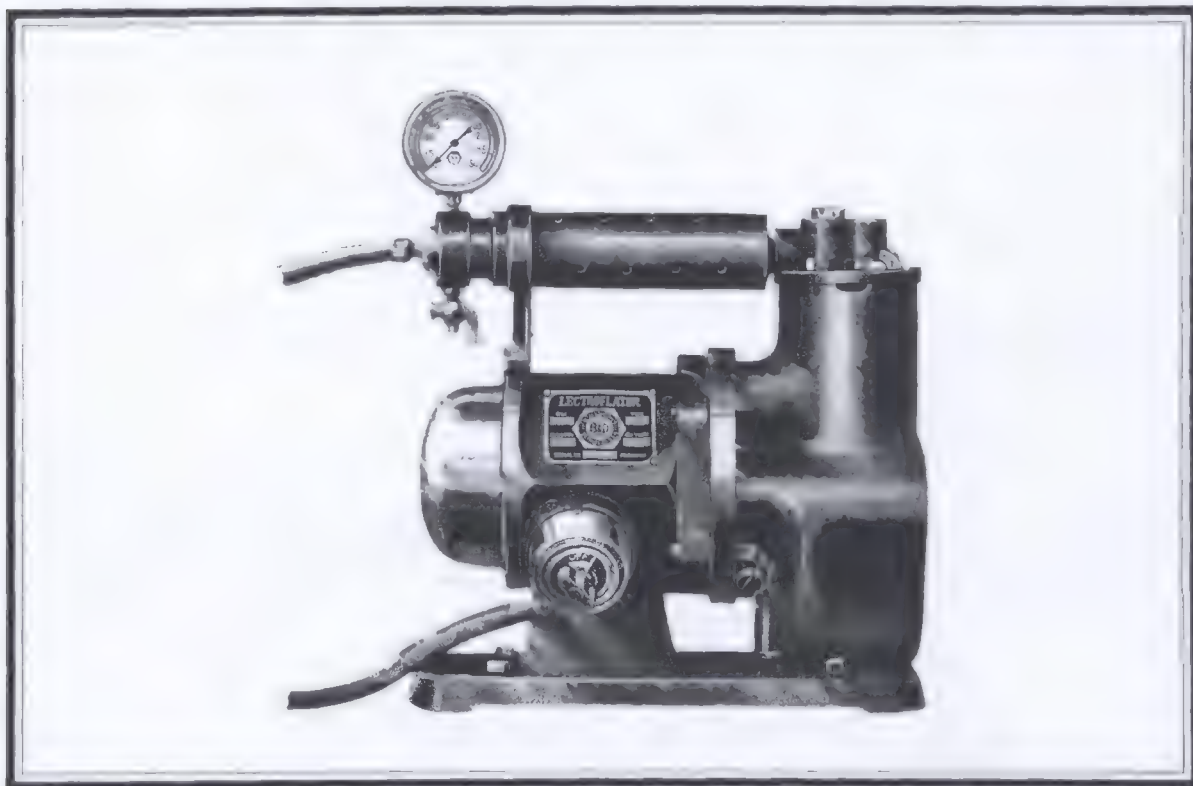
Motor, bearings and compressor are cooled by the patented *Black & Decker* method. The common housing forms one big air jacket and a centrifugal fan on the armature shaft circulates air through the housing, forcing it out through ports under the projecting flange of the valve head. There is no water to freeze or evaporate, yet the cooling is ample and positive.

LUBRICATION

Lectroflaters are grease-lubricated throughout and leave the factory fully lubricated and ready to run. There are no oil cups to refill, nor any oil level to maintain. Grease is fed to all bearings through felt wicks by capillary attraction. Gears run in grease. Cylinder walls are also grease-lubricated by means of a felt lubricating pad into which the piston is pressed slightly at the bottom of each stroke, picking up a small amount of grease which is deposited on the cylinder walls on the up-stroke.

FINISH

Black enamel with nickel trimmings. In addition to their efficient performance and reliability, Lectroflaters are unusually attractive in appearance, due to their entirely enclosed design and superior finish.



NO. 2 HAND ELECTROFLATER

THIS Electric Air Compressor can be carried about like a satchel. There is no installation cost to consider. Merely screw the attachment plug into the nearest electric-light socket and Lectroflater is ready for operation at a turn of the switch. Finished in black enamel with nickel trimmings.

Capacity—Two cubic feet of free air per minute. Will inflate 34" x 4" tire from flat to 70 pounds pressure in 1¾ minutes.

Maximum Guaranteed Pressure—150 pounds.

Motor—One-half horsepower. Will start the compressor against 150 pounds pressure without overloading. Operates on direct current or

alternating current of 25, 40 or 60 cycles. Full-load power consumption 550 watts.

Equipment—15 feet of duplex electric cable, electric switch, separable attachment plug, large accurate pressure gauge, 20 feet of hose and tire connector—complete and ready to run.

Net Weight—44 pounds.

Shipping Weight—60 pounds.

Shipping Dimensions—19" x 11" x 17".

	Price
110 volts	\$95.00
220 volts	99.00
32 volts (Farm Lighting Circuits)	99.00

Will operate on voltages 10% over or under those specified.

DO YOU KNOW—that having a Black & Decker Lectroflater in your private garage is the surest way to prolong the life of your tires?



No. 2 WALL LECTROFLATER

THIS is the standard No. 2 Lectroflater Air Compressor, the same as described on the opposite page, except that wall brackets are supplied, making it easy to mount on a pillar or wall wherever most convenient.

In addition to the obvious advantages of this outfit, it has been found that a number of these units constitute an ideal compressed air system for large public garages and service stations, in fact any place where a number of air stations are used. Such a system of independent units does away with the complications and wastage of a piping system, and makes use only of otherwise unavailable space. In case of accident to one station none of the others are affected.

Capacity—Two cubic feet of free air per minute. Will inflate 34" x 4" tire from flat to 70 pounds pressure in 1¾ minutes.

Maximum Guaranteed Pressure—150 pounds.

Motor—One-half horsepower. Will start compressor against 150 pounds pressure without overloading. Operates on direct current or alternating current of 25, 40 or 60 cycles. Full-load power consumption 500 watts.

Equipment—15 feet of duplex electric cable, electric switch, separable attachment plug, large accurate pressure gauge, 20 feet of hose, tire connector and wall brackets—complete and ready to run.

Net Weight—45 pounds.

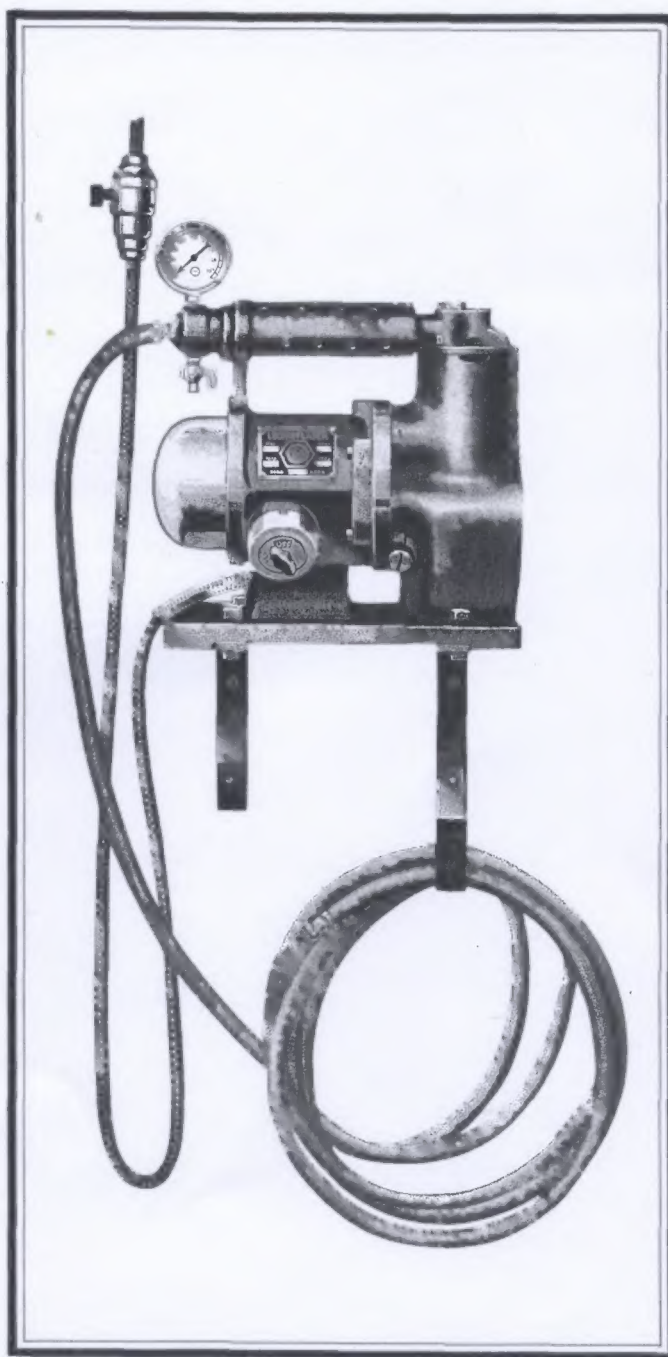
Shipping Weight—66 pounds.

Shipping Dimensions—17¼" x 11" x 17".

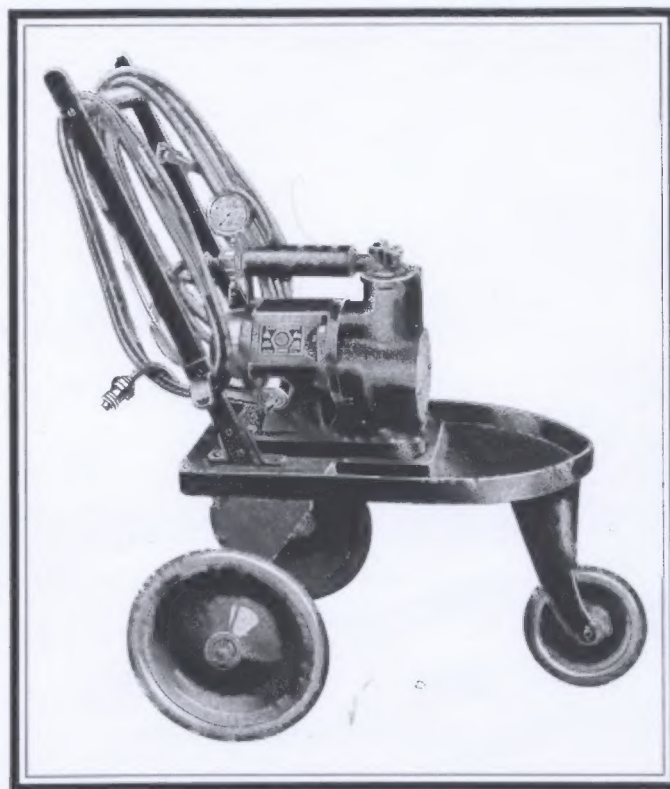
Price

110 volts	\$95.00
220 volts	99.00
32 volts (Farm Lighting Circuits)	99.00

Will operate on voltages 10% over or under those specified.



DO YOU KNOW—that sausages can be stuffed by means of air pressure supplied by a Black & Decker Lectroflater?



No. 2 CARRIAGE LECTROFLATER

THIS outfit consists of the standard No. 2 Lectroflater Electric Air Compressor mounted on a substantial three-wheeled carriage. The carriage is arranged with a tray for tools and is provided with hooks for the coiled electric cable and hose. It is light and can be easily wheeled about as circumstances require, saving your time and that of your employees. Particularly convenient for inside garage work as the air can be taken to the car, saving time and trouble of moving the automobile to a fixed air station.

Capacity—Two cubic feet of free air per minute. Will inflate 34" x 4" tire from flat to 70 pounds pressure in 1¾ minutes.

Maximum Guaranteed Pressure—150 pounds.

Motor—One-half horsepower. Will start the compressor against 150 pounds pressure with-

out overloading. Operates on direct current or alternating current of 25, 40 or 60 cycles. Full-load power consumption 550 watts.

Equipment—15 feet of duplex electric cable, electric switch, separable attachment plug, large accurate pressure gauge, 20 feet of hose and tire connector—complete and ready to run.

Net Weight—97 pounds.

Shipping Weight—140 pounds.

Shipping Dimensions—31" x 19" x 19".

	Price
110 volts	\$115.00
220 volts	119.00
32 volts (Farm Lighting Circuits)	119.00

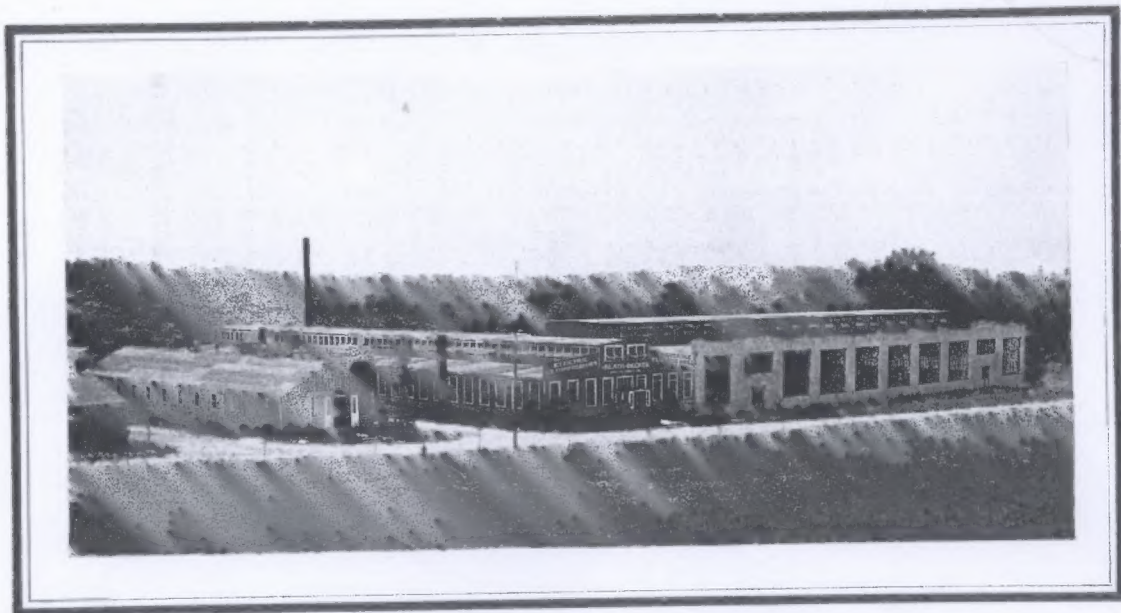
Will operate on voltages 10% over or under those specified.

DO YOU KNOW—that you can quickly and easily fill bottles and cans with heavy, slow-flowing liquids from bulk in drums by using a Black & Decker Lectroflater Electric Air Compressor to force it out of the drum through a small tube?

GUARANTEE

ALL Black & Decker products are covered by the usual guarantee against defective workmanship and material, with the understanding that replacements are to be F. O. B. our factory, or Factory Branch Service Station, and with the right reserved to decline responsibility where repairs have been made or attempted by unauthorized parties.

In all our products efficient service and long life have been the primary considerations and when you recognize the HEXAGON trademark you will know that the article on which it appears embodies these essential characteristics in a high degree and is backed, not only by the formal guarantee above recited, but by the integrity of a responsible concern with an established reputation for fair dealing.



U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D. C.

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